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DILEVSKI, BORCE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 10/563,219	**Applicant(s)** TAKEDA ET AL.	
	Examiner BORCE DILEVSKI	**Art Unit** 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _01 June 2006_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-28_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-28_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _04 January 2006_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _1/4/2006_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-28 have been examined and are pending.

Information Disclosure Statement

2. An initialed and dated copy of applicant's IDS form 1449 submitted on 1/4/2006 is attached to the instant office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 2,5, and 6** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **Claims 2,5, and 6 state "the termination processes" without having stated any initial termination processes in previous claims that claims 2,5, and 6 depend on.**

4. **Claim 21** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **Claim 21 first states "a mobile terminal or a mobile router" and then continues with a limitation stating "the mobile terminal and the mobile router". This is**

unclear due to the fact that applicant is first having a home agent connect to either a mobile terminal or mobile router but then states that the home agent stores the address of both the mobile terminal and mobile router.

This problem persists in the next limitation that partly states "received from the mobile terminal through the mobile router" which once again necessitates a need for both a mobile terminal and a mobile router while applicant has first called for either a mobile terminal or a mobile router but not both.

5. **Claims 12-18** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **Claims 12-18 claim first and second processes from independent claim 11 but do not state if they are the first and second processes of the terminal or server.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-7, 9-17, 18-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication US 2003/0142673 A1 to Patil et al and further in view of US Patent US 7,392,399 B2 to Grohoski et al.

As per claim 1, Patil et al teaches a terminal connected to a network and comprising:

a transmission/reception part for sending and receiving a packet (Patil et al, Fig. 3 and Par. 0058 Lines 2-4, The mobile node can transmit and receive data packets)**,**

a CPU (Patil et al, Fig. 3 and Par. 0059 Line 5, A processing unit is part of the mobile node) **and**

Patil et al does teach a memory for storing programs to be executed by the CPU to process a packet received from the transmission/reception part (Patil et al, Fig. 3 and Par. 60 and 61, The mobile node has a memory onto which programs are loaded onto. The

programs are run on the operating system and have to do with controlling the flow of data to and from the mobile node) **but does not teach executing first and second processes on a packet wherein the first and second processes are the processes executed on the same layer of said received packet. However, Grohoski et al teaches executing first and second processes on a packet** (Grohoski et al, Fig. 2 Col. 6 Lines 49-67 and Col. 7 Lines 1-12, A packet is received that is a crypto and then at a first processor additional data is identified for processing the packet (first or second process) and then the packet is sent to the crypto processor where the packet is processed using the additional data (first or second process)) **wherein the first and second processes are the processes executed on the same layer of said received packet** (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al with the packet processing method of Grohoski et al because the method improves efficiency of processing packets as well as gives a more diverse set of operations that a processor can perform.

As per claim 2, Patil et al and Grohoski et al teach a terminal according to claim 1 but Patil et al does not teach wherein the first

and second processes are the termination processes on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes are the termination processes on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are crypto packets and are secure, the processes decrypt the packets terminating their security processes)**.**

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al with the packet termination processes of Grohoski because the packet termination processes improve efficiency of processing packets as well as gives a more diverse set of operations that a processor can perform

As per claim 3, Patil et al and Grohoski et al teach a terminal according to claim 1 but Patil et al does not teach wherein the first and second processes are processes for terminating security processes executed on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes are processes for terminating security processes executed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for

processing the packet, both processes deal with the same layer of the packet. The packets are crypto packets and are secure, the processes decrypt the packets terminating their security processes).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al with the packet termination processes of Grohoski because the packet termination processes improve efficiency of processing packets as well as gives a more diverse set of operations that a processor can perform

As per claim 4, Patil et al and Grohoski et al teach a terminal according to claim 1 but Patil et al does not teach wherein the first and second processes are processes for decrypting results of encryption processes executed on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes are processes for decrypting results of encryption processes executed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are crypto packets and are secure, the processes decrypt the packets using decryption keys).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al

with the decryption processes of Grohoski et al because having encryption/decryption processes add security to the data that is being communicated.

As per claim 5, Patil et al and Grohoski et al teach a terminal according to claim 1 but Patil et al does not teach wherein the first and second processes are the termination processes of IPsec executed on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes are the termination processes of IPsec executed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are IPsec crypto packets and are secure, the processes decrypt the packets terminating their security processes).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al with the IPsec processes of Grohoski et al because IPsec processes add security to the data being communicated and the option of handling IPsec packets gives the terminal the ability to handle a diverse range of packet types.

AS per claim 6, Patil et al and Grohoski et al teach a terminal according to claim 1 but Patil et al does not teach wherein the first and second processes are the termination processes of TLS performed on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes are the termination processes of TLS performed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are TLS crypto packets and are secure, the processes decrypt the packets terminating their security processes).\

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al with the TLS processes of Grohoski et al because TLS processes add security to the data being communicated and the option of handling TLS packets gives the terminal the ability to handle a diverse range of packet types.

As per claim 7, Patil et al and Grohoski et al teach a terminal according to claim 1. Patil et al does teach a memory that stores programs (Patil et al, Fig. 3 and Par. 0061 Lines 1-2, The mobile node has a memory onto which programs are installed) **but does not teach a program of a first operation system and a program of a second**

operation system executed on the first operation system. However, Grohoski et al teaches a program of a first operation system and a program of a second operation system executed on the first operation system (Grohoski et al, Fig. 2 and Col. 5 Lines 50-67 and Col. 6 Lines 12-39, A microprocessor is shown having a CPU and a crypto co-processor. The operations set of the co-processor aides the CPU in it's operations using it's own operations set)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node procesing scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption;**

Further, Patil et al does not teach that the first process is a process executed on the second operation system. However, Grohoski et al teaches that the first process is a process executed on the second operation system (Grohoski et al, Col. 6 Lines 49-50, Additional data is identified (first process) by the CPU (second operation system))

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node procesing scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption; and**

Further, Patil et al does not teach that the second process is a process executed on the first operation system. However, Grohoski et al teaches that the second process is a process executed on the first operation system (Grohoski et al, Col. 7 Lines 1-2, The packet is processed (second process) by the crypto co-processor (first operation system))

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node procesing scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption.**

As per claim 9, Patil et al and Grohoski teach a terminal according to claim 1 wherein:

the network is also connected to a server for managing information on locations of the terminal (Patil et al, Fig. 1, Fig. 2, Par. 52 Lines 1-2, and Par. 25, The router (server) shown in Fig. 2 is a router used in all parts of the network shown in Fig. 1 including the home agent. A home agent maintains location information of the mobile node.)**; and**

Patil et al does also teach handling a packet transmitted from the server to the terminal (Patil et al, Par. 0025, The home agent send packets to the mobile node) **but does not teach first and second processes. However, Grohoski et al teaches first and second**

processes (Grohoski et al, Col. 6 Lines 49-53 and Col 7 Lines 1-4, Two processes are performed on a packet, identifying additional data and processing the packet using the data)**.**

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node packet processing scheme of Patil et al with the dual process packet processing of Grohoski et al because the method improves efficiency of processing packets as well as gives a more diverse set of operations that a processor can perform

As per claim 10, Patil et al and Grohoski et al teach a terminal according to claim 9 wherein:

the terminal is a terminal provided for mobile IP functions (Patil et al, Par. 0058 Lines 6-9, The mobile node performs functions using mobile IP)**;**

the server is a server provided for said mobile IP functions (Patil et al, Par. 0051 Lines 1-2, The router (server) performs functions using mobile IP)**;**

the terminal is a terminal functioning as a mobile node (Patil et al, Par. 0058, Fig. 3 and Lines 1-4, Fig. 3 is a diagram of a mobile node used)**; and**

the server is a server functioning as a home agent of the terminal (Patil et al, Fig. 1, Fig. 2, Par. 52 Lines 1-2, and Par. 25, The router

(server) shown in Fig. 2 is a router used in all parts of the network shown in Fig. 1 including the home agent).

As per claim 11, Patil et al teaches a communication system comprising a terminal and a server, which are connected to a network, wherein:

the terminal has a transmission/reception part for sending and receiving a packet (Patil et al, Fig. 3 and Par. 0058 Lines 2-4, The mobile node can transmit and receive data packets)**,**

a CPU (Patil et al, Fig. 3 and Par. 0059 Line 5, A processing unit is part of the mobile node) **and**

the server comprises a transmission/reception part for sending and receiving a packet (Patil et al, Fig. 2 and Par. 51, The router (server) shown sends and receives packets over the mobile IP netowrk)**,**

a CPU (Patil et al, Fig. 2 and Par. 0053 Lines 1-2, The router (server) has a CPU) **and**

the terminal having a memory for storing programs to be executed by the CPU to process a packet received from the transmission/reception part (Patil et al, Fig. 3 and Par. 60 and 61, The mobile node has a memory onto which programs are loaded onto. The programs are run on the operating system and have to do with controlling the flow of data to and from the mobile node)

a server having a memory for storing information on locations of the terminal (Patil et al, Fig. 1, Fig. 2, Par. 52 Lines 1-2, and Par. 25, The router (server) shown in Fig. 2 is a router used in all parts of the network shown in Fig. 1 including the home agent, this router has a memory. A home agent maintains location information of the mobile node)**, and a packet being received from the server** (Patil et al, Par. 0025, The home agent send packets to the mobile node)

Patil et al does not teach carrying out first and second processes on a packet wherein the first and second processes are the processes executed on the same layer of said received packet. However, Grohoski et al teaches executing first and second processes on a packet (Grohoski et al, Fig. 2 Col. 6 Lines 49-67 and Col. 7 Lines 1-12, A packet is received that is a crypto and then at a first processor additional data is identified for processing the packet (first or second process) and then the packet is sent to the crypto processor where the packet is processed using the additional data (forst or second process)) **wherein the first and second processes are the processes executed on the same layer of said received packet** (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al

with the packet processing method of Grohoski et al because the method improves efficiency of processing packets as well as gives a more diverse set of operations that a processor can perform.

Patil et al also does not teach wherein the first and second processes executed by the terminal are processes for the same layer of a packet. However, Grohoski et al teaches wherein the first and second processes executed by the terminal are processes for the same layer of a packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data that is identified for the packet is used for processing the packet, both processes deal with the same layer of the packet)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al with the packet processing method of Grohoski et al because the method improves efficiency of processing packets as well as gives a more diverse set of operations that a processor can perform

As per claim 12, Patil et al and Grohoski et al teach a terminal according to claim 11 but Patil et al does not teach wherein the first and second processes executed by the terminal are the termination processes on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes executed by the terminal are the termination processes on the same

layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are crypto packets and are secure, the processes decrypt the packets terminating their security processes)**.**

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al with the packet termination processes of Grohoski because the packet termination processes improve efficiency of processing packets as well as gives the terminal a more diverse set of operations that a processor can perform

As per claim 13, Patil et al and Grohoski et al teach a terminal according to claim 11 but Patil et al does not teach wherein the first and second processes executed by the terminal are processes for terminating security processes executed on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes executed by the terminal are processes for terminating security processes executed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are crypto

packets and are secure, the processes decrypt the packets terminating their security processes).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al with the packet termination processes of Grohoski because the packet termination processes improve efficiency of processing packets as well as gives the terminal a more diverse set of operations that a processor can perform

As per claim 14, Patil et al and Grohoski et al teach a terminal according to claim 11 but Patil et al does not teach wherein the first and second processes executed by the terminal are processes for decrypting results of encryption processes executed on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes executed by the terminal are processes for decrypting results of encryption processes executed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are crypto packets and are secure, the processes decrypt the packets using decryption keys).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al

with the decryption processes of Grohoski et al because having encryption/decryption processes add security to the data that is being communicated.

As per claim 15, Patil et al and Grohoski et al teach a terminal according to claim 11 but Patil et al does not teach wherein the first and second processes executed by the terminal are the termination processes of IPsec executed on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes executed by the terminal are the termination processes of IPsec executed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are IPsec crypto packets and are secure, the processes decrypt the packets terminating their security processes).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al with the IPsec processes of Grohoski et al because IPsec processes add security to the data being communicated and the option of handling IPsec packets gives the terminal the ability to handle a diverse range of packet types.

As per claim 16, Patil et al and Grohoski et al teach a terminal according to claim 11 but Patil et al does not teach wherein the first and second processes executed by the terminal are the termination processes of TLS performed on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes executed by the terminal are the termination processes of TLS performed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are TLS crypto packets and are secure, the processes decrypt the packets terminating their security processes).\

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al with the TLS processes of Grohoski et al because TLS processes add security to the data being communicated and the option of handling TLS packets gives the terminal the ability to handle a diverse range of packet types.

As per claim 17, Patil et al and Grohoski et al teach a communication system according to claim 11. Patil et al does teach a memory that stores programs (Patil et al, Fig. 3 and Par. 0061 Lines 1-2, The mobile node has a memory onto which programs are installed) **but does not teach a program of a first operation system and a program**

of a second operation system executed on the first operation system. However, Grohoski et al teaches a program of a first operation system and a program of a second operation system executed on the first operation system (Grohoski et al, Fig. 2 and Col. 5 Lines 50-67 and Col. 6 Lines 12-39, A microprocessor is shown having a CPU and a crypto co-processor. The operations set of the co-processor aides the CPU in it's operations using it's own operations set)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node procesing scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption;**

Further, Patil et al does not teach that the first process is a process executed on the second operation system. However, Grohoski et al teaches that the first process is a process executed on the second operation system (Grohoski et al, Col. 6 Lines 49-50, Additional data is identified (first process) by the CPU (second operation system))

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node processing scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption; and**

Further, Patil et al does not teach that the second process is a process executed on the first operation system. However, Grohoski et al teaches that the second process is a process executed on the first operation system (Grohoski et al, Col. 7 Lines 1-2, The packet is processed (second process) by the crypto co-processor (first operation system))

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node processing scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption.**

As per claim 19, Patil et al and Grohoski et al teach a communication system according to claim 11 wherein:

the terminal is a terminal provided for mobile IP functions (Patil et al, Par. 0058 Lines 6-9, The mobile node performs functions using mobile IP)**;**

the server is a server provided for said mobile IP functions (Patil et al, Par. 0051 Lines 1-2, The router (server) performs functions using mobile IP)**;**

the terminal is a terminal functioning as a mobile node (Patil et al, Par. 0058, Fig. 3 and Lines 1-4, Fig. 3 is a diagram of a mobile node used)**; and**

the server is a server functioning as a home agent of the terminal (Patil et al, Fig. 1, Fig. 2, Par. 52 Lines 1-2, and Par. 25, The router (server) shown in Fig. 2 is a router used in all parts of the network shown in Fig. 1 including the home agent)**.**

As per claim 20, Patil et al teaches a home agent connected to a terminal or a router through a network and comprising

a transmission/reception part for sending and receiving a packet (Patil et al, Fig. 1, Fig. 2, Par. 0025, and Par. 0051 Lines 1-4, The router in Fig. 2 is a router throughout the network of Fig. 1 including the home agent. The router (home agent) uses a mobile IP network to send and receive packets to a mobile node.)**,**

a CPU (Fig. 2 and Par. 0053 Lines 1-2, The router (home agent) in Fig. 2 has a CPU)**,**

an address memory for storing the address of the terminal or the router (Patil et al, Fig. 1, Fig. 2, Par. 52 Lines 1-2, and Par. 25, The router (server) shown in Fig. 2 is a router used in all parts of the network shown in Fig. 1 including the home agent. A home agent maintains location information of the mobile node or terminal) **and**

Patil et al does teach a program memory for storing programs to be executed by the CPU to process a packet received from the transmission/reception part (Patil et al, Fig. 2, Par. 0052 and Par. 0053, The router (home agent) has a memory onto which programs are loaded onto, these programs help with the processing the flow of packets) **but does not teach carrying out first and second processes on a packet wherein the first and second processes are the processes executed on the same layer of said received packet. However, Grohoski et al teaches executing first and second processes on a packet** (Grohoski et al, Fig. 2 Col. 6 Lines 49-67 and Col. 7 Lines 1-12, A packet is received that is a crypto and then at a first processor additional data is identified for processing the packet (first or second process) and then the packet is sent to the crypto processor where the packet is processed using the additional data (forst or second process)) **wherein the first and second processes are the processes executed on the same layer of said received packet** (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node of Patil et al with the packet processing method of Grohoski et al because the method improves efficiency of processing packets as well as gives a

more diverse set of operations that a processor can perform.

As per claim 21, Patil et al and Grohoski et al teach a home agent according to claim 20, the home agent connected to a mobile terminal or a mobile router wherein:

the address memory further stores the address of the mobile terminal and the mobile router (Patil et al, Fig. 1, Fig. 2, Par. 52 Lines 1-2, and Par. 25, The router (home agent) shown in Fig. 2 is a router used in all parts of the network shown in Fig. 1 including the home agent. A home agent has a memory as can be seen and maintains location information (address) of the mobile node)**; and**

Patil et al does teach handling a packet received from the mobile terminal (Patil et al, and Fig. 4, Par. 0025The home agent receives binding updates (packets) from the mobile node) **but does not teach first and second processes. However, Grohoski et al teaches first and second processes** (Grohoski et al, Col. 6 Lines 49-53 and Col 7 Lines 1-4, Two processes are performed on a packet, identifying additional data and processing the packet using the data)**.**

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node packet processing scheme of Patil et al with the dual process packet processing of Grohoski et al because the method improves efficiency of processing packets as well as gives a more diverse set

of operations that a processor can perform

As per claim 22, Patil et al and Grohoski et al teach a home agent according to claim 20 but Patil et al does not teach wherein the first and second processes are the termination processes on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes are the termination processes on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are crypto packets and are secure, the processes decrypt the packets terminating their security processes)**.**

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the router (home agent) of Patil et al with the packet termination processes of Grohoski because the packet termination processes improve efficiency of processing packets as well as gives a more diverse set of operations that a processor can perform

As per claim 23, Patil et al and Grohoski et al teach a home agent according to claim 20 but Patil et al does not teach wherein the first and second processes are processes for terminating security processes executed on the same layer of the received packet.

However, Grohoski et al teaches wherein the first and second processes are processes for terminating security processes executed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are crypto packets and are secure, the processes decrypt the packets terminating their security processes).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the router (home agent) of Patil et al with the packet termination processes of Grohoski because the packet termination processes improve efficiency of processing packets as well as gives a more diverse set of operations that a processor can perform

As per claim 24, Patil et al and Grohoski et al teach a home agent according to claim 20 but Patil et al does not teach wherein the first and second processes are processes for decrypting results of encryption processes executed on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes are processes for decrypting results of encryption processes executed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with

the same layer of the packet. The packets are crypto packets and are secure, the processes decrypt the packets using decryption keys).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the router (home agent) of Patil et al with the decryption processes of Grohoski et al because having encryption/decryption processes add security to the data that is being communicated.

As per claim 25, Patil et al and Grohoski et al teach a home agent according to claim 20 but Patil et al does not teach wherein the first and second processes are the termination processes of IPsec executed on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes are the termination processes of IPsec executed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are IPsec crypto packets and are secure, the processes decrypt the packets terminating their security processes).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the router (home agent) of Patil et al with the IPsec processes of Grohoski et al because IPsec processes add security to the data being communicated and the

option of handling IPsec packets gives the home agent the ability to handle a diverse range of packet types.

As per claim 26, Patil et al and Grohoski et al teach a home agent according to claim 20 but Patil et al does not teach wherein the first and second processes are the termination processes of TLS performed on the same layer of the received packet. However, Grohoski et al teaches wherein the first and second processes are the termination processes of TLS performed on the same layer of the received packet (Grohoski et al, Col. 6 Lines 49-67 and Col. 7 Lines 1-12, Since the additional data is used for processing the packet, both processes deal with the same layer of the packet. The packets are TLS crypto packets and are secure, the processes decrypt the packets terminating their security processes).\

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the router (home agent) of Patil et al with the TLS processes of Grohoski et al because TLS processes add security to the data being communicated and the option of handling TLS packets gives the home agent the ability to handle a diverse range of packet types.

As per claim 27, Patil et al and Grohoski et al teach a home agent according to claim 20. Patil et al does teach a memory that stores

programs (Patil et al, Fig. 2 and Par. 0055, The router (home agent) of Fig. 2 has a memory onto which programs are stored and installed) **but does not teach a program of a first operation system and a program of a second operation system executed on the first operation system. However, Grohoski et al teaches a program of a first operation system and a program of a second operation system executed on the first operation system** (Grohoski et al, Fig. 2 and Col. 5 Lines 50-67 and Col. 6 Lines 12-39, A microprocessor is shown having a CPU and a crypto co-processor. The operations set of the co-processor aides the CPU in it's operations using it's own operations set)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node procesing scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption;**

Further, Patil et al does not teach that the first process is a process executed on the second operation system. However, Grohoski et al teaches that the first process is a process executed on the second operation system (Grohoski et al, Col. 6 Lines 49-50, Additional data is identified (first process) by the CPU (second operation system))

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node procesing

scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption; and**

Further, Patil et al does not teach that the second process is a process executed on the first operation system. However, Grohoski et al teaches that the second process is a process executed on the first operation system (Grohoski et al, Col. 7 Lines 1-2, The packet is processed (second process) by the crypto co-processor (first operation system))

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node procesing scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption.**

7. Claims 8, 18, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication US 2003/0142673 A1 to Patil et al and further in view of US Patent US 7,392,399 B2 to Grohoski et al and US Patent 6,456,857 B1 to Bos et al.

As per claim 8, Patil et al and Grohoski et al teach a terminal according to claim 7. Patil et al is silent on wherein the second operation system is executed on a virtual machine configured on the

first operation system. However, Grohoski et al does teach wherein a second operation system is executed on a first operation system (Grohoski et al, Fig. 2 and Col. 5 Lines 50-67 and Col. 6 Lines 12-39, A microprocessor is shown having a CPU and a crypto co-processor. The operations set of the co-processor aides the CPU in it's operations using it's own operations set)**.**

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node procesing scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption;**

but is silent on the execution of a virtual machine configured on a first operation system

While both Patil et al and Grohoski et al are both silent on the execution of a virtual machine configured on a first operation system, Bos et al does teach a virtual machine configured on a first operation system (Bos et al, Col. 1 Lines 33-67, A virtual machine is installed on top of a native operating system in a mobile terminal)**.**

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the double process packet processing method of Patil et al and Groholski et al with the virtual machine configuration of Bos et al because (Bos et al, Col. 1 Lines 62-

67) **the java virtual machine allows the development of applications that are useful in the mobile nodes functionality.**

As per claim 18, Patil et al and Grohoski et al teach a communication system according to claim 17. Patil et al is silent on wherein the second operation system is executed on a virtual machine configured on the first operation system. However, Grohoski et al does teach wherein a second operation system is executed on a first operation system (Grohoski et al, Fig. 2 and Col. 5 Lines 50-67 and Col. 6 Lines 12-39, A microprocessor is shown having a CPU and a crypto co-processor. The operations set of the co-processor aides the CPU in it's operations using it's own operations set)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node procesing scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption;**

but is silent on the execution of a virtual machine configured on a first operation system

While both Patil et al and Grohoski et al are both silent on the execution of a virtual machine configured on a first operation system, Bos et al does teach a virtual machine configured on a first

operation system (Bos et al, Col. 1 Lines 33-67, A virtual machine is installed on top of a native operating system in a mobile terminal)**.** **Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the double process packet processing method of Patil et al and Groholski et al with the virtual machine configuration of Bos et al because** (Bos et al, Col. 1 Lines 62-67) **the java virtual machine allows the development of applications that are useful in the terminals functionality.**

As per claim 28, Patil et al and Grohoski et al teach a home agent according to claim 27. Patil et al is silent on wherein the second operation system is executed on a virtual machine configured on the first operation system. However, Grohoski et al does teach wherein a second operation system is executed on a first operation system (Grohoski et al, Fig. 2 and Col. 5 Lines 50-67 and Col. 6 Lines 12-39, A microprocessor is shown having a CPU and a crypto co-processor. The operations set of the co-processor aides the CPU in it's operations using it's own operations set)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the mobile node procesing scheme of Patil et al with the dual processing scheme of Grohoski et al because (Grohoski et al, Col. 6 Lines 12-15) **the addition of a crypto co processor enables higher speed encryption and decryption;**

While both Patil et al and Grohoski et al are both silent on the execution of a virtual machine configured on a first operation system, Bos et al does teach a virtual machine configured on a first operation system (Bos et al, Col. 1 Lines 33-67, A virtual machine is installed on top of a native operating system in a mobile terminal)**.**

but is silent on the execution of a virtual machine configured on a first operation system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the double process packet processing method of Patil et al and Groholski et al with the virtual machine configuration of Bos et al because (Bos et al, Col. 1 Lines 62-67) **the java virtual machine allows the development of applications that are useful in the home agents functionality.**

Conclusion

8. Prior art made of record not relied upon:

US 6,324,177 B1 to Howes et al discloses a method and apparatus for managing connections based on a client IP address

US 6,922,557 B2 to Fantaske discloses a wireless communication system

US 7,313,234 B2 to Tagagaki et al discloses a communication device, communication system, and algorithm selection method

US 7,082,477 B1 to Sadhasivam et al discloses a virtual application of features to electronic messages

US 7,376,125 B1 to Hussain et al discloses a service processing switch

US 2006/0104211 A1 to Islam et al discloses a method and apparatus for packet data service discovery

US 7,107,536 B1 to Dowling discloses a remote agent object based multilevel browser

US 7,050,861 B1 to Lauzon et al discloses controlling a destination terminal from an originating terminal

US 7,035,932 B1 to Downling discloses federated multiprotocol communication

US 6,901,429 B2 to Dowling discloses negotiated wireless peripheral security systems

US 7,453,852 B2 to Buddhikot et al discloses method and system for mobility across heterogeneous address spaces

US 7,266,703 B2 to Anand et al discloses single pass cryptographic processor and method

US 2002/0167938 A1 to Wakayama et al discloses a packet switching apparatus

US 2002/0161905 A1 to Haverinen et al discloses IP security and mobile networking

US 2002/0191604 A1 to Mitchell et al discloses application-specific information-processing method, system, and apparatus

US 2002/0133598 A1 to Strahm et al discloses network communication

US 2002/0147920 A1 to Mauro discloses a method and apparatus for providing secure processing and data storage for a wireless communication device

US 2002/0129236 A1 to Nuutinen discloses VoIP terminal security module, SIP stack with security manager, system and security methods

US 7,305,230 B2 to Zhigang discloses a system, apparatus, and method for providing a mobile server

US 7,047,405 B2 to Mauro discloses a method and apparatus for providing secure processing and data storage for a wireless communication device

US 6,865,681 B2 to Nuutinen discloses VoIP terminal security module, SIP stack with security manager, system and security methods

US 2005/0149724 A1 to Graff discloses a system and method for authenticating a terminal based upon a position of the terminal within an organization

US 2004/0158716 A1 to Turtiainen et al discloses authentication and authorization based secure ip connections for terminals

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BORCE DILEVSKI whose telephone number is (571)270-7154. The examiner can normally be reached on M-F 7:30AM - 5:00PM or Flexible.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Ryman can be reached on (571)272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BD

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